AUTOMATIC FREQUENCY CORRECTION APPARATUS AND METHOD OF OPERATION

ABSTRACT OF THE DISCLOSURE

A frequency shift keyed (FSK) receiver for demodulating an incoming transmitted signal comprising: 1) a phase-locked loop for receiving an oscillator reference signal having a frequency F1 and generating a reference carrier frequency signal having a desired frequency N1(F1), wherein N1 may be a non-integer value, the phase-locked loop comprising: a) a phase detector having a first input for receiving the oscillator reference signal and a second input; and b) a frequency divider circuit for dividing an actual frequency of the reference carrier frequency signal by an adjustable integer value N2 applied to a control input of the frequency divider circuit to generate a feedback signal applied to the second input of the phase detector. The FSK receiver further comprises: 2) a frequency discriminator that receives the incoming transmitted signal and the reference carrier frequency signal and generates a correction signal corresponding to a difference between a center frequency of the incoming transmitted signal and the actual frequency of the reference carrier frequency signal; and 3) a delta-sigma modulator controlled by the correction signal operable to generate a sequence of integers having an average value of N2 over a defined time period, wherein the sequence of integers are applied to the control input of the frequency divider circuit.